

Changes in distribution area of Korean musk deer (*Moschus moschiferus parvipes*) from 1950s to 1999 in South Korea

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Abstract: Based on the literature reviews and questionnaire, field survey on the species, feces, and tracks in non-snow season and snow season of Korean musk deer from February to December of 1999 in South Korea (Cultural Properties Administration 1999), the authors summarized the change of distribution area and number of Korean musk deer from 1950s to 1999. The results showed that the distribution area of Korean musk deer (*Moschus moschiferus parvipes*) was sharply decreased from 1950s to 1999 in South Korea. Due to the road and forest road construction in the habitat of Korean musk deer, the musk deer habitats were fragmented and lost. And the illegal capture for economic benefits was the main reason of decreases in number of individuals and habitats of this species. Forest roads in high elevation area were also used as the passages for illegal captures. For the conservation and protection of Korean musk deer, strict regulation of illegal capture is urgently needed.

Keywords: Distribution; Illegal capture; Korea; Korean musk deer; Road construction

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Introduction

In the family of Moschidae, there are 5 species, which are Siberian musk deer (*Moschus moschiferus*), black musk deer (*Moschus fuscus*), Himalayan musk deer (*Moschus leucogaster*), forest musk deer (*Moschus berezovskii*), and alpine musk deer (*Moschus chrysogaster*), (Sheng et al. 1999). The Korean musk deer (*Moschus moschiferus parvipes*) is a subspecies of Siberian musk deer, which occurs in China, Mongolia, North and South Korea, Russia, Kazakhstan and Kyrgyzstan. IUCN classified this species as vulnerable and Korean government designated it as the natural monument (Won 1992).

Musk deer was known usually in coniferous, mixed coniferous and broad-leaf forests in mountain areas. Throughout its life, the musk deer inhabits a rather fixed area and seldom changes (Norwak 1983). And this species likes to be alone and does not live in groups. We can observe male and female living together just only during mating season. Because its sense of hearing, smell, and sight are very well, musk deer is sharp-witted and always very cautious and sensitive. It often stops, pricking up its ears, to look around while doing something, and then resumes its activities when it reassures that nothing is happening. The musk deer runs fast and jumps high. It can change steps on a cliff and even go up the stem of a tree at an angle of 45° from the ground (Sheng 1992; Yoon 1992;

Cultural Properties Administration 1999).

Musk, the secretion from the musk bag of male musk deer, has a pungent smell. It is a valuable ingredient in traditional Chinese medicine and is also appreciated as a rare animal species. According to traditional medicine, musk has many qualities: it can be used to make all sense organs more sensitive, to improve the condition of the body's main and collateral channels, to stimulate the blood circulation, to reduce inflammation, and to relieve internal heat or fever (Sheng 1992).

From time immemorial, Musk deer have been hunted by man for musk, one of the few mammal substances used in perfumes. Musk is not only used in Europe as a based for exquisite perfumes but also in the Far East for a great variety of medicinal applications (sore throats, chills, fever and rheumatism), (Yoo 2000).

By the illegal capture, the population size and distribution area of Korean musk deer were sharply decreased in South Korea (Cultural Properties Administration 1999). This study was conducted to clarify the changes in distribution area of Korea musk deer from 1950s to 1999, and to gain the basic information in their habitats for the sound conservation and management of this species in South Korea.

Method

The studies on distributions of Korean musk deer in South Korea from 1950s to 1999 were conducted based on literature reviews, questionnaire, and field survey. We have searched for all the articles and newspapers on the occurrence and illegal captures of this species. Questionnaire was conducted by the interviews to inhabitants and forester from January to July 1999. Based on the literature

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reviews and questionnaire, the field survey was carried out by observation of this species, including feces, tracks, and other field signs in non-snow season, as well as snow tracking in snow season from February to December of 1999 in South Korea (Cultural Properties Administration 1999).

Results and discussion

The distribution area of Korean musk deer had a greatly changes from 1950s to 1999 in South Korea. In 1950s, Korean musk deer occurred in wide range of the mountain areas. However, the habitat areas had been decreased in 1970s, and sharply decreased in 1999 (Fig. 1).

After the Korean War (1950-1953), illegal capture for economic benefits of musk gland was the main reason of

the sharp decreases in the number of individuals and habitats in South Korea (Cultural Properties Administration 1999; Yoo 2000). Since 1960s, South Korea has entered the industrialized and urbanized time. And the roads and forest road were constructed and coal-mining areas were developed in mountain area, which is the habitat of Korean musk deer (Forestry Research Institute 1999); the habitats were fragmented and lost. Forest roads in high elevation area were also used as the passages for illegal captures. Therefore, proper regulation of forest road use should be established for the protection of this species.

The most threatening factor for the survival of that species would be illegal capture for economic benefits in South Korea. For the conservation and protection of Korean musk deer, strict law of protection to natural habitats would be urgently founded.

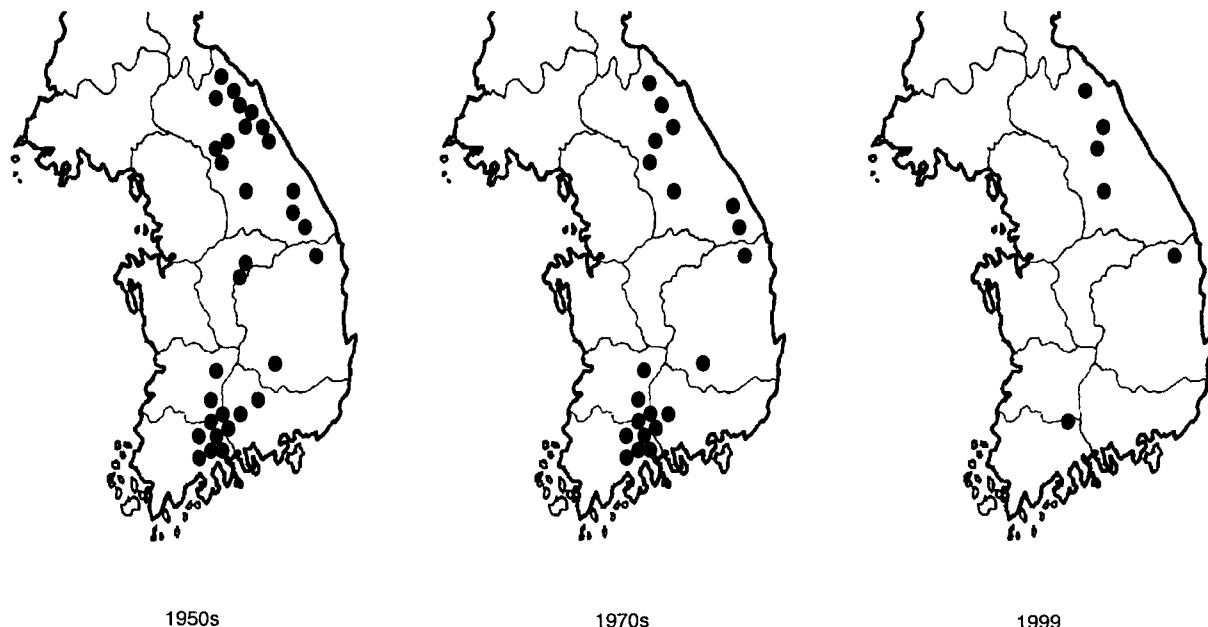


Fig. 1 Changes in distribution area of Korean musk deer (*Moschus moschiferus parvipes*) from 1950s to 1999 in South Korea

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